REPAIR STATION RATINGS

The History

FAR Part 1 currently states that ***rating*** *means a statement that, as part of a certificate, sets forth special conditions, privileges, or limitations.* When the regulation of air commerce began in the United States, with the passage of the Air Commerce Act of 1926,[1] ratings were the safety[2], or specialty identifiers for aircraft, the skill level identifiers for airmen[3] and the safety and suitability identifiers for air navigation facilities.[4] Repair stations were not mentioned in the 1926 Act; as such facilities had not yet been developed. With the rapid development of civil aviation in the United States during the 1920s and 1930s, economic need led to creation of repair stations (along with other entities such as schools for training pilots and mechanics). Upon passage of the Civil Aeronautics Act of 1938, creating the Civil Aeronautics Authority (later changed to Administration) (CAA), regulation of the operations of repair stations and their personnel,[5] which had started by regulation under the general authority of the 1926 Act, became a legislatively directed regulated activity. Ratings, as defined today, were used then to differentiate between repair stations of greater, lesser or different skills. However, CAA requirements for various minimum levels of equipment, facilities and personnel skills often blurred the need for the strict ratings covering the skills and competency of the certificated organizations; redundancy of the rating system with the basic repair station requirements became evident.

> After passage of the Civil Aeronautics Act of 1938, when the CAA repair station certificate itself served as the standard for the required skill level, the use of a rating system for repair stations played a secondary position. Part 52 - Repair Station Ratings, used the term in its title with the same meaning as the term is defined today[6] and ratings, covering all repair station activities, were defined as follows:
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> 52.1 **Repair Station ratings**. Repair station ratings are as follows:
> (a) Aircraft of composite construction;

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[1] May 20, 1926

[2] *The Secretary of Commerce shall by regulation — (b) Provide for the rating of aircraft of the United States as to their airworthiness.* Section 3 (b) Regulatory powers: Air Commerce Act of 1926.

[3] *The Secretary of Commerce shall by regulation — (c) Provide for the periodic examination and rating of airmen serving in connection with aircraft of the United States as to their qualifications for such service.* Section 3 (c) Regulatory powers: Air Commerce Act of 1926.

[4] *The Secretary of Commerce shall by regulation — (d) Provide for the examination and rating of air navigation facilities available for the use of aircraft of the United States as to their suitability for such use.* Section 3 (d) Regulatory powers: Air Commerce Act of 1926.

[5] as to the adequacy and suitability of the equipment, facilities, and materials for, and methods of, repair, alteration, maintenance, and overhaul of aircraft, aircraft engines, propellers, and appliances, and the competency of those engaged in the work or giving any instruction therein. Section 607 Air Agency Ratings, Civil Aeronautics Act of 1938.

[6] See Civil Air Regulation Part 52 Repair Station Rating — as amended to October 1, 1942

(b) Aircraft of all metal construction;
(c) Aircraft engines;
(d) Aircraft metal propellers and metal hubs;
(e) Aircraft wood propellers and their metal propeller hubs;
(f) Aircraft instruments.

To be able to operate as a repair station with one or more of the above ratings, the repair station had to be eligible for, and obtain, a certificate from the Civil Aeronautics Administration.

> 52.2 **Repair station certificate requirements**. To be eligible for a rating as a repair station and certification as such, an applicant shall comply with the following requirements:

Following Section 52.2 is a listing of requirements applicable to all repair station certificates — 52.2 . . adequate personnel certificated as required by the Civil Air Regulations and qualified to perform or supervise the type of work involved; 52.21 . . suitable housing facilities which are adequately heated, lighted, and ventilated; 52.22 . . an adequate system of inspection; 52.23 . . a stockroom for . . materials; 52.24 . . facilities and equipment for making drawings; and 52.25 . . other requirements as necessary (with the Administrator of the Civil Aeronautics Administration [CAA] determining what is *necessary*). A footnote in Part 51 refers the reader to Manual No. 52, which contains ". . in detail various types of work . . within the scope of [rated] repair stations . ." as well as "lists of equipment, facilities, and material . . approved as adequate. ." The repair station's ratings, during this time frame, established its areas of work specialty as well as its work limits.

Following the very rapid growth of civil aviation following WWII, particularly, in the number of aircraft models, the complexity of the aircraft types used in scheduled and on-demand commercial service and the marked increase in navigation and communication equipment, it was determined by the Civil Aeronautics Administration (the entity that administered the regulations) and the Civil Aeronautics Board (the entity that promulgated virtually all of the CARs) that a comprehensive overhaul of the rules affecting the maintenance, repair and alteration of the civil aviation fleet in the United States was necessary.

Beginning in 1948, a concerted government/industry program to revise CAR 18 Maintenance, Repair, and Alteration of Airframes, Powerplants, Propellers, and Appliances, CAR 24 Mechanic Certificates, CAR 52 Repair Station Certificates and CAR 53 Mechanic School Certificates was started. It led, more than a year later, to the simultaneous publication in the Federal Register of four Notices of Proposed Rulemaking, proposing significant changes to each of these related CARs.[7]

The proposed changes to CARs 18, 24, 52 and 53 were not well received and the comments and criticisms were profuse. As a result, after considerable government/industry consultations, a new Notice of Proposed Rulemaking (rather than a final rule) appeared in the April 28, 1951 issue of the Federal Register. The preamble of proposed CAR 18 carried the following comments about its revised proposals:

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[7] See 14 F.R. 7533 dated December 16, 1949

> The revise part, with certain exceptions, provides that only certificated mechanics, persons operating under the supervision of certificated mechanics, or repair stations shall be authorized to work on aircraft or aircraft components.

The exceptions were for pilots performing preventive maintenance on their personally owned aircraft and for manufacturers to rebuild or alter their own products without the need to obtain a repair station certificate. The preamble also states that:

> In addition, except. . [for] permissive work by manufacturers, the part restricts the performance of work on instruments and the making of major repairs and alterations on propellers to appropriately rated repair stations.

The preamble of proposed CAR 24 carried the following comments about its revised proposals:

> In view of the almost unanimous adverse reaction from all industry segments to our original proposal to issue propeller, radio, instrument, and accessory ratings to individual mechanics, we have decided to provide standards for mechanics certificates with only airframe and powerplant ratings. . However, in proposed Part 52 we have made provision for the issuance to repair stations of propeller, radio, instrument, and accessory ratings of several different classes, and in proposed Part 18, we have required that instrument repair and alteration and major propeller repairs be performed by a certificated repair station. Part 52 makes the repair station responsible for the competence of its personnel. .

The preamble of proposed CAR 52 carried the following comments about its revised proposals:

> The most important innovations in the previously proposed revisions of part 52 are provisions for the issuance of repair station ratings for radio, instruments, and accessories, and for the issuance of ratings limited to the performance of specialized services. . .
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> . . This proposal sets forth the main functions to be performed by a repair station holding a particular rating. It is believed that these functions are stated in such terms as to permit an applicant and a CAA examining agent to determine jointly the facilities and equipment required to be furnished for a particular rating without resort, as under regulations, to a detailed mandatory list of facilities and equipment. . .

The preamble of proposed CAR 53, noting the previous changes to proposed CARs 18, 24 and 52, dropped (among other things), from its earlier NPRM, the proposed required curriculum for instrument, radio and accessory mechanics, as such certificates would not be issued by the CAA, though it further noted that "this action does not prohibit establishment of specialized courses or schools to train certificated airmen for employment by repair stations."

All four of the April 28, 1951 proposed rule changes (Parts 18, 24, 52 and 53) were adopted as final rules, without significant changes, and were published in the Federal on April 5, 1952. The preamble to the changes of CAR 52 is instructive in explaining its intent and a significant portion is quoted below:

> Currently effective Part 52 establishes requirements for the issuance of repair station certificates and ratings and basic operating rules for the holders thereof. It is the intent of this revision to improve the standards of repair stations. To accomplish this objective additional repair station ratings are hereby established to take into account the trend toward specialization, so that the stations will be better able to maintain present-day aircraft. . .
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> Under the terms of this part the following general ratings may be issued to repair stations: Airframe, powerplant, propeller, radio, instrument, and accessory. Instead of these general ratings a limited rating may be issued authorizing an applicant to work on some particular type of airframe, powerplant, etc., or to perform some specialized maintenance, repair, or overhaul function.
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> All applicants are required to furnish housing, facilities, equipment, materials and personnel adequate to perform competently the work authorized by the particular rating sought. The exact type and amount of such housing, facilities, equipment, materials and personnel will, in all probability, vary in each instance.

Thoughts and Conclusions

The regulations affecting the maintenance, repair and alteration of the civil aviation fleet, published in 1952, were the last basic, substantive review and change of the scope (additions and reorganizations not withstanding). The Civil Aeronautics Manual (CAM) covering Repair Station Certificates, published in June 1952, shortly after publication in the Federal Register of the revised Civil Air Regulation Part 52, contains, in addition to the CAR, the interpretations and policy pronouncements of the Civil Aeronautics Administration that substantively affected the scope of the CAR. The subject coverage and arrangement of this CAM differs little from the 1961 CAM 52 that was the basis for the re-codification of the content of the repair station rules into FAR Part 145. Amendments to the regulation since publication of Part 145[8] have not changed its subject coverage and arrangement; they have only added a few new words appropriate to the age of avionics (electronics)[9]

The concept expressed in the 1948 — 1952 period, when the "maintenance" industry and its regulatory authority used (or believed it did) the rating concept as the solid base for the assurance that a repair station would have all the necessary technical expertise (people skills, equipment, tools and instructions) to properly inspect, service, repair, overhaul or modify a certificated product was probably a good one. It was easier then to identify all of the *things* one needed to do the job. The basic tools, manuals and facilities rules generally complemented the specific rating requirements and the close working relationships between the responsible CAA inspectors and the applicant for (or holder of) a repair station certificate would provide the means to eliminate conflicts or uncertainties between the rating and the housing and facilities

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[8] 27 F.R. 6662, July 13, 1962

[9] And left in a few obsolete or changed circumstances words — see, for instance, 145.(a)(1) & (2), covering composite construction of aircraft, which is defined in Part 52 as "structure of the airframe is made of at least two types of substances, such as metal and wood." The common use of the term, composite construction, as used in aircraft, is, of course, entirely different today.

and equipment and materials requirements. That is what the CAA said would happen. But it is an area of concern today.

Perhaps the conflicts today occur because the repair station and FAA personal (or either one of them in any particular case) do not understand the background or objectives of the rules or the words themselves (see my note on composite structures). Education can help in this case, though it is not a perfect cure. Perhaps a bit of the history of how we got where we are today could help. However, I do not believe it is possible to include in FAR 145 all of the *things* one needs to have or do in this dynamic, evolving field in a regulation unless that regulation is reconsidered at least once a year. Though I see fault in the rating system, I believe it can be fixed to cover broad cases of repair station expertise and specialization. The general rules covering the housing and facilities and equipment and materials requirements are probably more amenable to cleanup so as to complement the ratings. This is said in part because no substantive changes were made to the ratings in the new Part 145 and ratings are used in the airman field. But the matter needs a good hard look in view of the fact that problems have occurred in understanding what the rules mean and what is required. It is, in my opinion, a problem of understanding the existing rules in the context in which they were written and intended to apply and then applying them properly.

Stanley J. Green

§ 44701. General requirements

(a) PROMOTING SAFETY.—The Administrator of the Federal Aviation Administration shall promote safe flight of civil aircraft in air commerce by prescribing—

(1) minimum standards required in the interest of safety for appliances and for the design, material, construction, quality of work, and performance of aircraft, aircraft engines, and propellers;

(2) regulations and minimum standards in the interest of safety for—

(A) inspecting, servicing, and overhauling aircraft, aircraft engines, propellers, and appliances;

(B) equipment and facilities for, and the timing and manner of, the inspecting, servicing, and overhauling; and

(C) a qualified private person, instead of an officer or employee of the Administration, to examine and report on the inspecting, servicing, and overhauling;

(3) regulations required in the interest of safety for the reserve supply of aircraft, aircraft engines, propellers, appliances, and aircraft fuel and oil, including the reserve supply of fuel and oil carried in flight;

(4) regulations in the interest of safety for the maximum hours or periods of service of airmen and other employees of air carriers; and

(5) regulations and minimum standards for other practices, methods, and procedure the Administrator finds necessary for safety in air commerce and national security.

(b) PRESCRIBING MINIMUM SAFETY STANDARDS.—The Administrator may prescribe minimum safety standards for—

(1) an air carrier to whom a certificate is issued under section 44705 of this title; and

(2) operating an airport serving any passenger operation of air carrier aircraft designed for at least 31 passenger seats.

(c) REDUCING AND ELIMINATING ACCIDENTS.—The Administrator shall carry out this chapter in a way that best tends to reduce or eliminate the possibility or recurrence of accidents in air transportation. However, the Administrator is not required to give preference either to air transportation or to other air commerce in carrying out this chapter.

(d) CONSIDERATIONS AND CLASSIFICATION OF REGULATIONS AND STANDARDS.—When prescribing a regulation or standard under subsection (a) or (b) of this section or any of sections 44702–44716 of this title, the Administrator shall—

(1) consider—

(A) the duty of an air carrier to provide service with the highest possible degree of safety in the public interest; and

(B) differences between air transportation and other air commerce; and

(2) classify a regulation or standard appropriate to the differences between air transportation and other air commerce.

(e) BILATERAL EXCHANGES OF SAFETY OVERSIGHT RESPONSIBILITIES.—

(a) when the Administrator decides that the requirements are or would be unreasonably costly, burdensome, or impractical.

(d) COMMUTER AIRPORTS.—In developing the terms required by subsection (b) for airports covered by subsection (a)(2), the Administrator shall identify and consider a reasonable number of regulatory alternatives and select from such alternatives the least costly, most cost-effective or the least burdensome alternative that will provide comparable safety at airports described in subsections (a)(1) and (a)(2).

(e) EFFECTIVE DATE.—Any regulation establishing the terms required by subsection (b) for airports covered by subsection (a)(2) shall not take effect until such regulation, and a report on the economic impact of the regulation on air service to the airports covered by the rule, has been submitted to Congress and 120 days have elapsed following the date of such submission.

(f) LIMITATION ON STATUTORY CONSTRUCTION.—Nothing in this title may be construed as requiring a person to obtain an airport operating certificate if such person does not desire to operate an airport described in subsection (a).

§ 44707. Examining and rating air agencies

The Administrator of the Federal Aviation Administration may examine and rate the following air agencies:

(1) civilian schools giving instruction in flying or repairing, altering, and maintaining aircraft, aircraft engines, propellers, and appliances, on the adequacy of instruction, the suitability and airworthiness of equipment, and the competency of instructors.

(2) repair stations and shops that repair, alter, and maintain aircraft, aircraft engines, propellers, and appliances, on the adequacy and suitability of the equipment, facilities, and materials for, and methods of, repair and overhaul, and the competency of the individuals doing the work or giving instruction in the work.

(3) other air agencies the Administrator decides are necessary in the public interest.

§ 44708. Inspecting and rating air navigation facilities

The Administrator of the Federal Aviation Administration may inspect, classify, and rate an air navigation facility available for the use of civil aircraft on the suitability of the facility for that use.

§ 44709. Amendments, modifications, suspensions, and revocations of certificates

(a) REINSPECTION AND REEXAMINATION.—The Administrator of the Federal Aviation Administration may reinspect at any time a civil aircraft, aircraft engine, propeller, appliance, air navigation facility, or air agency, or reexamine an airman holding a certificate issued under section 44703 of this title.

(b) ACTIONS OF THE ADMINISTRATOR.—The Administrator may issue an order amending, modifying, suspending, or revoking—

(1) any part of a certificate issued under this chapter if—

(A) the Administrator decides after conducting a reinspection, reexamination, or other investigation that safety